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MAT 100.01: Intermediate Algebra

Charles Funkhouser
The University Of Montana

MATH 100: INTERMEDIATE ALGEBRA

(c) Fall 2005

DR. CHARLES FUNKHOUSER

CLASS TIMES: Monday, Wednesday & Friday, 10:10 AM - 11:00 AM

LOCATION: AD – 04

TEXTBOOK: Intermediate Algebra , Martin-Gay.

OFFICE: AD – 09C

OFFICE HOURS: TBA

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COURSE OVERVIEW

Instruction in mathematics is fundamental to the development of an educated and contributing member of society. This course will suggest ways in which current practice, research, and technology can be used to better master fundamental concepts of algebra applicable to a variety of degree programs and career choices. MATH 100 will help you become better prepared for subsequent mathematics courses and your chosen career.

TOPICS (Not necessarily in the given order)

1. Problem solving
2. Critical thinking
3. Real numbers and algebraic expressions
4. Equations and inequalities
5. Graphs and functions
6. Systems of equations
7. Exponents, polynomials and polynomial functions
8. Rational expressions
9. Rational exponents, radicals and complex numbers
10. Quadratic equations and functions
11. Exponential and logarithmic functions

OBJECTIVES

Students who successfully complete MATH 100 will be able to:

1. use a variety of tools, physical models, and appropriate technology to develop an understanding of algebraic concepts and relationships, and their use in describing the world.

2. formulate and solve problems whose solutions require algebraic skills.

3. apply algebra to everyday and work situations.

4. explore the operations, properties, and uses of real numbers and algebraic expressions.

5. develop and solve problems using equations and inequalities.

6. graph functions and interpret such graphs.

7. solve systems of linear equations in two or more variables including through the use of matrices.

8. simplify expressions having exponents

9. manipulate expressions and solve equations involving polynomials

10. perform simplification of and operations on rational expressions

11. use radicals and radical functions in problem solving

12. solve quadratic equations and inequalities

13. manipulate composite, inverse, exponential and logarithmic functions

14. use paper-and-pencil representations, manipulative materials, and technological devices to conduct algebraic exploration.

15. become familiar with current mathematics as it relates to one's chose career.

COURSE REQUIREMENTS

		Points Possible	Points Obtained
1.	Mathematics Problem Writeup	10	_____
2.	Problem Presentation	10	_____
3.	Notetaking	10	_____
4.	In-class Assignments	10	_____
5.	Student's Choice	10	_____
6.	Announced Quizzes	80	_____
7.	Unannounced Quizzes	20	_____
8.	Midterm Examination	50	_____
9.	Comprehensive Examination	100	_____
10.	Attendance/Participation		
	[Since group activities cannot be "made up", -1 point for each class missed - FOR ANY REASON (see #4)]		

These are the only criteria used to evaluate your work. *There is no "extra credit" available.*

GRADING SCALE

Grade	Percent	Points
A	90-100%	270-300
B	80-89	240-269
C	70-79	210-239
D	60-69	180-209
F	< 60	< 180

(*For example*, 269 points is a B, 270 points is an A.)

LATE POLICY

Each assignment is to be submitted on the due date. This includes quizzes and tests. The grade for a late quiz or test is 0%. The grade for other late materials will be reduced by 10% for each week or partial week they are late.

This policy is applied to ALL assignments which are late FOR ANY REASON.

NO ASSIGNMENTS will be accepted after the last regular class meeting.

ELECTRONIC DEVICES

In order to encourage an atmosphere of free and honest intellectual exchange in our class, electronic recording devices of any type may not be used. Similarly, please turn off all cell phones and other electronic devices before entering our classroom.

ACTIVITIES

1. Problem Writeup: Choose one application or "word problem" given toward the end of later assigned problem sets. The "Chapter Projects" are an especially useful source for this activity. The following format is required for your writeup:

Bibliographical Data: book title, author, page, problem number (1)

Problem Statement: Copy the problem *as is* in the text, then *restate it* in your own words. (2)

Summary: A thorough, concise statement of your solution to the problem (2)

Problem Representation: Visual, graphic, technology-based or concrete model of the problem (2)

Personal Statement: Discuss the potential usefulness of the problem to YOU in your degree program or chosen career (3)

(Objectives 1, 2, 3, 14, 15)

2. Problem Presentation: Each student shall prepare a solution to an application or "word problem" from the problem sets in our textbook for presentation in our class. The presentation should be motivational and instructional. **Presentations should last about 3-5 minutes.** Handouts or other materials to share are required.
(All objectives)

3. Notetaking: Each student shall be responsible for reporting about one class meeting. Typed copies of the report shall be made available to all class members within one week. Reports should include:

- Date of the class meeting
- Sections of textbook covered
- Topics considered
- Activities and significant ideas emphasized

(Varies)

4. In-class Assignments: Brief assignments related to readings or class sessions will be given at some class meetings. These will include, but not be limited to, small group or mathematics lab activities. Such assignments are especially integral to a complete understanding of the content of the course. Attendance is critical in completion of this course component. (All objectives)

5. Student's Choice: Some activity in class might have been especially helpful for you to grow in mathematics and toward your career. Choose one activity and REPEAT it, ENHANCE it, or CREATE your original version. You also may choose to negotiate (with your instructor) another activity which you think will be especially helpful in growing as a mathematics teacher. Such activities may include, but are not limited to, conferences, workshops, or the development of career-related materials.
(Varies)

6. Announced Quizzes: These quizzes will cover material discussed since the previous quiz or test. Such quizzes will usually be given at the end of the week. There will be five opportunities in class to determine your four "Announced Quiz" scores.
(Varies)

7. Unannounced Quizzes: These quizzes will cover material assigned in a recent class session. There will be two such quizzes. All "Unannounced Quizzes" will be "take home. " They will be given out at the end of a class period and due by the beginning of the next class meeting. Note that consistent with the course “Late Policy”, neither can be “made up.”
(Varies)

8. Midterm Examination: The midterm examination will cover material presented in the preceding class meetings. Sources for this examination will include the text, discussions, activities, and lectures.
(All objectives)

9. Comprehensive Examination: This examination will cover all material presented throughout the course. Sources for the examination will include the text, discussions, activities, and lectures.
(All objectives)

10. Attendance/Participation: Your active participation is encouraged and expected. Active participation is not possible without your consistent attendance. In-class assignments missed FOR ANY REASON cannot be made up. (See COURSE REQUIREMENTS #4 for additional information on how these points are obtained.)
(All objectives)

TENTATIVE COURSE CALENDAR

Module	Activity	Readings	Due
1	Overview	Syllabus & Sec. 1.1	
2	C. 1, Real Numbers and Algebraic Expressions	pp.7-43	A6
3	C. 2, Equations, Inequalities and Problem Solving	pp. 51-116	A6
4	C. 3. Graphs & Functions	pp. 129-201	A1
5	C. 4, Systems of Equations	pp. 215-262	
6	C. 5, Exponents, Polynomials & Polynomial Functions	pp. 274-354	
7	Midterm Examination		A8
8	C. 6, Rational Expressions	pp. 363-432	A5
9	C. 7, Rational Exponents, Radicals & Complex Numbers	pp. 445-504	A6
10	C. 8, Quadratic Equations & Functions	pp. 517-576	A6
11	C. 9, Exponential & Logarithmic Functions	pp. 587-642	A2, A3, A6, A7
12	Comprehensive Examination		A9 (See bulletin)